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DRIVING SCHOOL LEARNING (DSL)

ABSTRACT

Driving School Learning (DSL) has been developed to help people to easily understand about signboard and also know how to maintain car when learning from this system. At this time, the teaching and learning at driving school still learn by manual process. This system will make user easy to understand. This is developed to help the user memories easily before take a real test. Through the system, user can learn easily understand the module.
1.1 Introduction

Driving School Learning (DSL) has been developed to help people to easily understand about signboard and maintenance. Which is developed to help the user learning the module in this system and also the maintenance. This system will help user know about signboard. Through the system, user will understand more and easily to understand about signboard.

1.2 Background

This chapter describe Driving School Learning (DSL) for user to learn to learn about system. Driving School Learning (DSL) contains information about signboard module quiz and also game.

With the current practice, some difficult have been notice such as user difficult to understand the module during the tutorial beside that user not really understand about the information from the learning because sometime user miss some information and with this system they can imagine the real situation.
With the IT trends, computer has been used widely in many area and level such as business, sciences and technology, economic, education include in this driving module.

In order to overcome the issues is driving module nowaday are suitable to used this system. It is because this technology will improve the knowledge and their driving experiences. Besides, in this system will improve their knowledge.

By using this system, user also can increasing their knowledge and also decrease percentage of fail in during test.

1.3 Problem Statement

This system develop because to fulfill the number of problem statement below :-

User lack of idea to improve their safety during driving because user not have any experience during driving.

Sometime user not really understanding the situation during the practice because a lot of information are miss. Besides, in the manual learning not all the situation will be learn.

For the maintenance practice, the user may not know what user should do in bad situation.
1.4 **Objective**

In order to overcome a few objective has been identified:-

i) To develop system about safety during driving.

ii) To develop the system about how understand the signboard and use.

1.5 **Scope**

The proposed study area is related with the development of a Web-based related to a Driving School module. The scope of the proposed DS system include:-

i) DS system is specially design to learn driving practice skill.

ii) DS system is also develop for user who interest to learn driving skill.

iii) DS system also include Driving School modules.

1.6 **Thesis Organization**

This thesis consists of seven chapters. An introduction chapter describes the introduction of project, problem statement, objectives, scope and. Chapter Two was the review of relevant literature references previous studies, system manual and describing the problem. Chapter Three the methodology. Chapter Four discusses the system requirements. While Chapter Five discusses the analysis and design of systems. Chapter Six of the implementation of the system. The final chapter of Chapter Seven of the discussion about the system.
SECTION 2

LITERATURE REVIEW

2.0 Introduction

This chapter present about concepts about this system, literature review, about the project research and the problem also their solution of the problems. According to Lamb, David (2013) literature review are a staple for research in nearly every academic field. The literature review are the important part which to achieve project objectives. According to the research, the information which are important and related will be achieve by using the literature review.

The purpose of literature review is to help researcher to undertand how the image move in step by step and also to understand what the simulation use for user nowaday. Beside that, the literature review are important to understand the whole of the project.

The literature review are include the research from the thesis, technical document and also the case study. This is because literature review will be more
systematic review because it combines the review from all other journals to make a more realistic result.

Finding the research will help us to get the best way to develop the system. Furthermore, this chapter also guides us to find the related research to develop to the system.

2.1 Theory And Concept

Theory and concept will be used in this system are very important to build the system. This is because this theory or concept gives more understanding about this system. Have some of the theory and concept will be used in building the DS system.

2.2 Type Of Methodology

There are a variety of methodologies introduced and used by software developers as a model of the software development lifecycle and systems. Among them, the Rational Unified Language (RUP), Extreme Programming (XP), System Development Life Cycle (SDLC) and prototyping. SDLC methodologies and prototype is used as a standard conventional software engineering until the era of the 90's. Meanwhile, the object-oriented approach has received attention at the present time and has been practiced by many large companies such as IBM and Microsoft. The methodology of this approach is that RUP and XP.

In general, the SDLC is a structured and phased methodology. One of the SDLC methodology is the waterfall model. The development phase of this model consists of a preliminary analysis, requirements specification, system design, implementation, and maintenance. Each phase represents a different activity. The
next phase cannot continue as long as the previous phase is completed. However, it allows the repetition phase if there are problems or changes in the structure of the software. This method is ideal for software development are well understood.

Prototype model was implemented according to the software that small and medium sized. This is because this model has a long development period. The model is divided into two, namely, development of exploration for Development and disposable prototype. The main objective of the exploration model is to engage customers or users as the development of the system. Once the user list needs, and well understood by the developers then the system is made. Disposable models also are designed to enable users to understand the requirements of the system starting from a low level of understanding. Initially, developers will model the system according to its own understanding, and then referred to the customer or user. If there are changes, the model will be adjusted according to customer requirements. This will save time and make the software user friendly.

Rational Unified Process (RUP), is a process framework developed by Rational Software. It is a development methodology for repetition (iterative) based on six best practices that is, the repetition of the development, management requirements, use component design, reflects the model (UML), identify ongoing needs and manage change. RUP is basically divided into four phases: Inception, Elaboration, Construction and Transition. Each phase contains one or more repetitions. At each iteration, provided some amount of discipline as project management, requirements, analysis and design as well as testing and implementation.
2.2.1 Selected Of Methodology

Driving School Learning (DSL) have been choose Rational Unified Process (RUP) as a method. This is because it has been widely used in the industry not only in software development but also in the field of manufacturing and engineering.

RUP has a lot of advantages, there are

i. The RUP Is a Software Engineering Process.
   RUP provides a disciplined approach to perform the duties and responsibilities in the organization's development. The aim is to produce high quality software that meets the needs of end users to schedule and budget expectations.

ii. RUP Is a Process Product.
    RUP is developed and maintained by Rational Software. RUP developer teams work with customers, partners, groups and organizational consultant Rational products. This is to ensure that the process is constantly updated and improved.

iii. RUP is supported by the tool.
    This tool runs automatically for most of the process. This tool is used to create and maintain a variety of artifacts (models) engineering processes such as visual modeling, programming, testing, and so on.

iv. RUP Ultimate Guide to Using the Unified Modeling Language
    UML is an industry standard language that can accurately describe the requirements, architecture and design.
Phase of RUP development model:

i. Inception

Initial phase is the initial stage the analysis process to identify risk development projects based on the needs of users. Summary of the analysis made allows project developers to gauge the feasibility of the project.

ii. Elaboration

Elaboration phase is based on the results obtained from the initial phase, where they will serve as a guide to architectural projects that provide the foundation include the design and implementation methods.

iii. Construction

Construction phase is completing the process of project development. This phase focuses on aspects of resource management, operational control the cost and quality.

iv. Transition

Transition phase is the process of handing over the project to the end user. This phase is to ensure the development of the project is in line base on requirement objective and the project go through the process of product testing. The process of testing is important to avoid the risk of failure and delay the transition process is done. User feedback plays an important role in case of minor modifications that do not exist any setup, installed and used properly.
2.3 Manual Method

In the manual method in driving school, lesson are usually conducted in the one hour theory and they need to understand all they need to understand all the module in one time.

2.4 Comparison System

Table 2.4.1 shows the comparison between manual method and Driving School Learning(DSL).

<table>
<thead>
<tr>
<th>No.</th>
<th>Matters</th>
<th>Manual Method</th>
<th>Driving School Learning(DSL)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Platform</td>
<td>-</td>
<td>Windows</td>
</tr>
<tr>
<td>2</td>
<td>Suitable</td>
<td>Adult only</td>
<td>All people</td>
</tr>
<tr>
<td>3</td>
<td>Language</td>
<td>Malay, Dialect</td>
<td>Malay</td>
</tr>
<tr>
<td>4</td>
<td>Features</td>
<td>Using car equipment</td>
<td>Use mouse, keyboard,picture,animation</td>
</tr>
<tr>
<td>5</td>
<td>Time</td>
<td>Limited</td>
<td>Unlimited</td>
</tr>
<tr>
<td>6</td>
<td>Assessment</td>
<td>Theory,test</td>
<td>Theory,quiz</td>
</tr>
</tbody>
</table>

Table 2.4.1: Comparison system and manual
2.5 Software For Develop System

For software develop system, have a lot of software will be used. Tool that have been to use during develop the system have been describe above.

i. Adobe Flash Media

Adobe Flash Player is the standard for delivering high-impact, rich Web content. Designs, animation, and application user interfaces are deployed immediately across all browsers and platforms, attracting and engaging users with a rich Web experience.

ii. Adobe Photoshop

Adobe Photoshop is a graphics editing program developed and published by Adobe Systems. Adobe's 2003 "Creative Suite" rebranding led to Adobe Photoshop 8's renaming to Adobe Photoshop CS. Thus,
Adobe Photoshop CS6 is the 13th major release of Adobe Photoshop. The CS rebranding also resulted in Adobe offering numerous software packages containing multiple Adobe programs for a reduced price. Adobe Photoshop is released in two editions: Adobe Photoshop, and Adobe Photoshop Extended, with the Extended having extra 3D image creation, motion graphics editing, and advanced image analysis features.

iii. Microsoft Visual Studio

Microsoft Visual Studio

PHP is a server-side scripting language designed for web development but also used as a general-purpose programming language. PHP code is interpreted by a web server with a PHP processor module, which generates the resulting web page: PHP commands can be embedded directly into an HTML source document rather than calling an external file to process data. It has also evolved to include a command-line interface capability and can be used in standalone graphical applications.
2.6 **Problem Proposed**

There are several problems which were found difficult process. Some of the reasons are:

i. **Inefficient data access**
Factors data of Driving School Learning (DSL) keeping and process of data cause takes a long time.

ii. **Consistent data**
The data represent to the system is consistent when data represent to the system. This cause when the process of not updating the data consistent.

2.7 **Proposed Solution**

To overcome the weaknesses in the manual method in driving school module, then some suggestions have been made to address the problem. Among the proposed solutions are:

i. **Solving the problem of inefficient data access**
All data related to driving school module such as driving practice will be stored into the database, it makes access to data and information become more efficient and quicker to use the search key information.

ii. **Solution inconsistent data**
Through the use of a centralized database of all information about driving school modules can be updated easily. When an updated, any other relevant
information in the database will be updated automatically so as to avoid duplication.

SECTION 3

METHODOLOGY

3.1 Introduction

In this chapter discusses about the process and methodology used in Driving School Learning (DSL). A RUP method one of the process to solve the problems. To find a method or technique needs analysis which are accurate and detailed. Selection of software development techniques to ensure the system developed without disruption or failure. Every possibility from the whole system includes work flow, data flow should be examined by using the right ways. The methodology used in this project is SDLC methodology.
3.2 Structure Model

3.2.1 *Rational Unified Process (RUP) Model*

![Rational Unified Process (RUP) Model Diagram](image)

RUP has four phases: Inception, Elaboration, Construction and Transition. Each phase contains one or more iteration or repetition. Each repetition is allocated a number of work flow, such as Project Management, Requirements, Analysis and Design, Implementation, and Testing. RUP main purpose is to reduce the risk of failure of project development.
Figure 3.1: Iteration Model
3.3 Workflow

Workflow of Driving School Learning (DSL) involves project management, requirement, design and implementation.

i. Project Management

Workflow includes work as a project development planning guidelines in doing any activities. Planning includes identifying problems and the processes that occur as well as the level of risk that can retard the development of the smooth development of the project. All project management is done in detail to ensure that development projects are completed on time and development costs.

ii. Requirement

Specifications need to be determined as a result of discussions between developers and users. Requirements obtained from users through a variety of methods such as interviews, questionnaires and so on. Through the requirements raised then it is certain constraints and operational feasibility and cost estimates for the project.

iii. Design

After requirements are identified, the requirement must be converted to system design. The design of object-oriented, where each entity and the processes involved will be described in simple terms. Then, a detailed explanation is also generated for each use case generated.
iv. Implementation

Implementation is the process of development of the project as planned after understanding the requirements and make analysis. This project involves the environment developer or user environments.

v. Testing

The testing process will be carry out to ensure that projects are developed not have any errors that produce incorrect output. In addition, tests are conducted to ensure the suitability of the environment. Testing involves all phases includes modules and sub-modules and integration between modules. Final testing is done by real users(end user) to ensure that development projects meet the needs and specifications of the user.
3.4 Instructional Design

3.4.1 Use Case Diagram
### 3.4.2 Use Case Specification

<table>
<thead>
<tr>
<th>Use Case ID</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Use Case Name</strong></td>
<td>Driving School Learning (DSL)</td>
</tr>
<tr>
<td><strong>Actor</strong></td>
<td>Admin, User</td>
</tr>
<tr>
<td><strong>Description</strong></td>
<td>Fully Driving School Learning (DSL) flow</td>
</tr>
</tbody>
</table>
| **Precondition** | 1. User enter into the System  
2. User choose the option |
| **Postcondition** | 1. User get the result from the learning |
| **Normal Flow** | 1. User open the system  
2. Enter to the main menu  
3. Choose either the option  
   a. Modul  
   b. Quiz  
   c. “Uji Minda”  
4. If user choose quiz  
5. After finish, the system will show the result  
6. If “uji minda” user will choose either  
   a. School  
   b. Beach  
   c. Town  
   d. waterfall  
7. And user will choose either continue or end the system |
3.4.3 Activity Diagram

Welcome Screen

idle

Go to Main Menu

Main Menu

Choose module

User choose either the option

Driving Skill Practice

User choose quiz

Quiz

User get the result

Get Result

User want go to main menu

User want go to main menu
3.4.4 Learning Content

i. Practice Module

In this module, users will only practice driving with instructions and mark will be calculated. The instruction will given in important part.

ii. Test Module

In this module, user not given any instruction and mark will be calculated. Test module is look like a real test. If the user make a serious fault, the test will be fail. The end of the test, the system will show the marks.

iii. Maintenance Module

In this module, user will learn about the important part in the car. Beside that, the user will learn how to change tyres, refill water and so on.
3.5 **Project Requirement**

3.5.1 **Software Requirement**

*Table 3.5.1* shows the software requirement needed to develop the system.

<table>
<thead>
<tr>
<th>No.</th>
<th>Software</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Microsoft Word 2010</td>
<td>To prepare document</td>
</tr>
<tr>
<td>2</td>
<td>Microsoft Power Point 2010</td>
<td>To prepare document presentation</td>
</tr>
<tr>
<td>3</td>
<td>Microsoft Visio 2010</td>
<td>To prepare flow chart</td>
</tr>
<tr>
<td>4</td>
<td>Microsoft Visual Studio 2010</td>
<td>To Sketch interface</td>
</tr>
<tr>
<td>4</td>
<td>Microsoft Project</td>
<td>To prepare gantt chart</td>
</tr>
<tr>
<td>5</td>
<td>Foxit Reader</td>
<td>To read any journal from internet</td>
</tr>
<tr>
<td>6</td>
<td>Adobe Flash CS6</td>
<td>To develop the application</td>
</tr>
<tr>
<td>7</td>
<td>Adobe Photoshop</td>
<td>To design the interface and edit the picture</td>
</tr>
</tbody>
</table>

*Table 3.5.1: Software Requirement*

3.5.2 **Hardware Requirement**

*Table 3.4.1* shows the hardware requirement needed to develop the system.

<table>
<thead>
<tr>
<th>No.</th>
<th>Hardware</th>
<th>Minimum requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Computer</td>
<td>Microsoft window 7</td>
</tr>
<tr>
<td>2</td>
<td>CPU</td>
<td>Intel® Core™ 2 T6400</td>
</tr>
<tr>
<td>3</td>
<td>Keyboard</td>
<td>88-/89-/93-key keyboard with inverted &quot;T&quot; cursor layout</td>
</tr>
<tr>
<td>4</td>
<td>Hard Disk</td>
<td>125 GB</td>
</tr>
<tr>
<td>5</td>
<td>Speaker</td>
<td>Make a sound from application</td>
</tr>
</tbody>
</table>

*Table 3.5.2: Hardware Requirement*